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Patient satisfaction with aesthetic outcome after bilateral prophylactic mastectomy and immediate reconstruction with implants☆

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Summary Previous studies regarding body image after bilateral prophylactic mastectomy with breast reconstruction have reported a risk of reduced satisfaction with body image and adverse effects on sexual life. The aim of this retrospective study was to find areas for future surgical improvements to optimize patient satisfaction with the aesthetic result after bilateral prophylactic mastectomy and immediate breast reconstruction with implants. Nipple-areola complexes were reconstructed. Twenty-four consecutive and standardized operated women were included. The follow-up time was an average of 5.4 (range: 2.4—10.2) years.

The outcome in terms of breast symmetry, size, and firmness were measured with objective and subjective methods, and results were compared to those from a control group of 24 women. Patient satisfaction was evaluated with a questionnaire.

Main findings were that the overall aesthetic result was regarded as good in both objective and subjective evaluations and that breast symmetry in patients was as common as in the control group, but reconstructed breasts were firmer. Twenty of 24 patients thought that the aesthetic result exceeded their expectations, and 22/24 would recommend this kind of breast reconstruction to another woman. In contrast with the predictions of plastic surgeons, patients were most dissatisfied with the nipple-areola reconstruction.

Conclusions: The overall aesthetic result after bilateral prophylactic mastectomy and immediate breast reconstruction with implants was good and symmetrical. Patient satisfaction with nipple-areola reconstruction was only moderate. The results emphasize the

☆ Some preliminary results in this study have been presented at the General Meeting of the Swedish Society of Medicine in Gothenburg, 24th—26th November 2004.

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importance of a preoperative discussion with the patient regarding whether to keep or reconstruct the nipple-areola complex while planning a prophylactic mastectomy.

Prophylactic mastectomy is the most effective risk-reducing strategy for women with an increased risk of breast cancer.[1,2] Since it became possible to test for the gene mutations BRCA1[3] and BRCA2[4] that are associated with an estimated 43—85% lifetime risk of developing breast cancer,[5] the number of prophylactic mastectomies has increased. Patients choose this operation to reduce their risk of developing breast cancer, but aesthetic outcome is also important for its long term impact on their quality of life.[6] Women who undergo bilateral prophylactic mastectomy are often young and reports have shown that they exhibit reduced body image satisfaction and adverse effects in sexual life during the postoperative period.[7—13] The aesthetic outcome after the operation can be regarded as an important component of body image satisfaction and body appearance confidence during sexual situations. Satisfaction with the aesthetic result of breast reconstruction after prophylactic mastectomy has been reported to range from 60% to 74%.[6,14] It has also been shown that preoperative information must be improved in order to permit both informed decisions and realistic aesthetic and functional expectations for this group of patients.[15] This retrospective study evaluates patient satisfaction, aesthetic outcome, breast symmetry, breast size, and breast firmness with objective and subjective methods after bilateral prophylactic mastectomies and immediate reconstruction with implants. The study also compares the results of breast symmetry and breast firmness with breasts in a control group of non-operated women. Knowledge about patient satisfaction and aesthetic outcome can be used to both improve the quality of preoperative information and suggest surgical refinements for future patients.

Materials

The purpose of this study was to evaluate the cosmetic outcome in a specific group of patients without a previous history of breast cancer who underwent bilateral prophylactic mastectomy and immediate breast reconstruction with implants. To be able to evaluate the final aesthetic result, patients who had undergone their last breast surgical procedure fewer than two years prior were excluded. Twenty-eight consecutive patients operated upon with bilateral prophylactic mastectomy and immediate reconstructions with implants during the period from 1994 to 2001 at the Karolinska University Hospital in Stockholm were invited to participate. Three patients opted not to participate (no reason given), and one patient could not be located. Twenty-four patients agreed to participate. The mean age of the patients at surgery was 42.5 (range: 28—53) years. The mastectomies were carried out through horizontal oval skin excisions and included resection of the nipple-areola complexes. The bases of the nipples were sent for special pathological examination to reveal any occult atypias or cancer in the nipples. In all cases the tips of the nipples were regrafted as the histopathological examination showed normal tissue. One breast surgeon performed the mastectomies in fifteen patients, and another four surgeons operated on the remaining nine patients. All breast reconstructions in this study were performed immediately after the mastectomies by one plastic surgeon. Twenty-two patients received permanent silicone/saline expanders with removable ports, and two patients received permanent silicone implants. The mean implant volume was 325 (170—500) cc. All implants were placed in a complete submuscular pocket behind the great pectoral and serratus anterior muscles; care was taken to obtain complete fascial and muscular cover of the implants.[16] Postoperative pathological examination of removed breast tissue did not reveal breast cancer in any patient, but two patients had unilateral atypical ductal hyperplasia. After postoperative expansion in the outpatient clinic, a specially trained nurse tattooed the areolas to complete the reconstruction. All patients in this study completed bilateral breast reconstruction. In eleven patients, complementary correcting surgery was performed to improve the final aesthetic result. A minority of patients went through several of the following procedures: excision of scar tissue (2), capsulotomy because of capsular contraction (3), exchange of implants (2), liposuction (2), or correction of nipples (6). Minor corrections of the regrafted nipples due to asymmetry in size and placement were most common. In two cases bilateral nipple reconstructions with star-flap technique were needed.

This study was carried out when a minimum of two (average: 5.4, range: 2.4—10.2) postoperative years had passed since the most recent breast surgery. The mean age of the patients at follow up was 47.2 (range: 36—58) years. No patient developed breast cancer during the follow up period.

Twenty-four healthy women without previous breast surgery matching the patient group with respect to breast volume with a mean age of 41.3 (range: 26—58) years were used as controls. These women were examined to collect data regarding symmetrical variance (asymmetry) and breast firmness in a normal population when evaluating the surgical outcome. All patients and controls in the study were examined by one of the authors (J.G).

This study was approved by the ethical committee at the Karolinska University Hospital in Stockholm.

Methods

Objective aesthetic evaluation

Breast symmetry

To evaluate symmetry between the right and the left breast, the positions of the nipple and submammary fold were calculated. This was done by measuring the distance